

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1.-40. (Cancelled).

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41. (New) A method of controlling a yarn processing system including a yarn consuming textile machine, a yarn feeding device upstream of the textile machine, a rotatable supply spool upstream of the yarn feeding device and a control arrangement which controls a winding drive of the yarn feeding device and regulates the rotational resistance of the supply spool which must be overcome by the winding drive when withdrawing yarn from the supply spool, said method comprising the steps of:

pulling a yarn off of the supply spool with the winding drive with varying speed to form and maintain an intermediate yarn store which satisfies a yarn consumption demand of the textile machine at any time;

detecting speed variations of the winding drive with the control arrangement; and

actively regulating the rotational resistance of the supply spool substantially in synchronism with, and based upon, the detected speed variations of the winding drive with the control arrangement.

42. (New) The method of Claim 41, wherein said step of actively regulating includes increasing the rotational resistance of the supply spool by braking the supply spool to bring same to a stop when the winding drive is deactivated to prevent an after-run of the supply spool.

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43. (New) The method of Claim 42, including stopping the deactivated winding drive with the yarn by said braking of the supply spool.

44. (New) The method of Claim 41, including detecting the yarn tension between the supply spool and the yarn feeder, and regulating the rotational resistance of the supply spool based upon a predetermined yarn tension.

45. (New) The method of Claim 41, including:
monitoring the size of the yarn store with a yarn sensor provided in the yarn feeding device;
controlling an actuation current for the winding drive with the control arrangement by generating run or stop signals for the winding drive based upon signals received from the yarn sensor; and
said step of actively regulating includes regulating the rotational resistance of the supply spool based upon the yarn sensor signals or the run or stop signals.

46. (New) The method of Claim 41, including:
monitoring the size of the yarn store with a yarn sensor;
with the control arrangement, providing a stop signal to the winding drive and switching off an actuation current for the winding drive based upon a maximum signal provided by the yarn sensor, or providing a run signal to the winding drive and switching on the actuation current for the winding drive based upon a minimum signal provided by the yarn sensor; and
said step of actively regulating is performed based upon one of: the minimum or maximum signal; and the run or stop signal.

47. (New) The method of Claim 41, wherein said step of actively regulating includes varying the rotational resistance

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of the supply spool between a free running condition and a stand still condition, and increasing the rotational resistance of the supply spool to achieve the stand still condition based upon a stoppage of the winding drive represented by one of: a maximum signal provided by a yarn sensor which monitors the size of the yarn store; a stop signal provided by the control arrangement to the winding drive; and a currentless condition of a drive motor of the winding drive.

48. (New) The method of Claim 47, wherein said step of increasing includes increasing the rotational resistance of the supply spool with an adjustable delay.

49. (New) The method of Claim 41, wherein said step of actively regulating includes decreasing the rotational resistance of the supply spool at the occurrence of one of: a minimum signal provided by a yarn sensor which monitors the size of the yarn store; and a run signal provided by the control arrangement to the winding drive to accelerate the winding drive.

50. (New) The method of Claim 41 wherein said step of actively regulating includes decreasing the rotational resistance of the supply spool prior to the occurrence of one of: a minimum signal provided by a yarn sensor which monitors the size of the yarn store; and a run signal provided by the control arrangement to the winding drive to accelerate the winding drive.

51. (Withdrawn) The method of Claim 41, wherein said step of actively regulating includes driving said supply spool in a yarn conveying direction.

52. (New) A yarn processing system comprising a yarn consuming textile machine, a yarn feeding device disposed upstream of said textile machine and including a winding drive, a rotatable supply spool disposed upstream of said yarn feeding device and positioned relative to said yarn feeding device for a tangential yarn release, said supply spool being rotatable by yarn tension generated during withdrawal of the yarn by said winding drive, a regulating device which varies a yarn releasing rotational resistance of said supply spool, and a control arrangement which controls said winding drive to allow the formation of a yarn store through withdrawal of yarn from said supply spool, the yarn store being of a size sufficient to satisfy a consumption demand of said textile machine but varying in size based upon consumption by said textile machine, said control arrangement additionally controlling said regulating device based upon detected speed variations of said winding drive such that the rotational resistance of said supply spool is regulated by said regulating device substantially in synchronism with speed variations of said winding drive.

53. (New) The yarn processing system of Claim 52 wherein said yarn feeding device includes a yarn sensor disposed to monitor the size of the yarn store formed on a storage body of said yarn feeding device, said yarn sensor providing signals to said control arrangement which are indicative of the size of the yarn store, and said control arrangement permitting communication between a control of said winding drive and a control of said regulating device such that said regulating device varies the rotational resistance of said supply spool based upon one of: a signal provided by said yarn sensor; and a signal provided by said winding drive control.

54. (New) The yarn processing system of Claim 52, wherein said regulating device comprises a braking device which engages and disengages with said supply spool.

55. (New) The yarn processing system of Claim 54, wherein said yarn feeding device includes a yarn sensor which monitors a maximum size of the yarn store and which generates a maximum signal, said control arrangement including a control for said winding drive which generates a stop signal and switches off actuation current to a drive motor of said winding drive upon occurrence of the maximum signal, and a control for said braking device in communication with said winding drive control, said braking device control causing said braking device to engage with said supply spool upon the occurrence of one of: the maximum signal generated by said yarn sensor; and the stop signal generated by said winding drive control.

56. (New) The yarn processing system of Claim 55, wherein said yarn feeding device includes a further yarn sensor which monitors a minimum size of the yarn store and which generates a minimum signal, said winding drive control generating a run signal and switching on actuation current to the drive motor of said winding drive upon occurrence of the minimum signal, said braking device control causing said braking device to disengage with said supply spool upon the occurrence of one of: the minimum signal generated by said yarn sensor; and the run signal generated by said winding drive control.

57. (New) The yarn processing system of Claim 55, wherein said braking device is engageable with said supply spool with an adjustable delay based upon the occurrence of

one of: the maximum signal of said yarn sensor; and the stop signal of said winding drive control.

58. (New) The yarn processing system of Claim 56, wherein said control arrangement includes an external pick-up head which without contact with said yarn feeding device and without galvanic connection to said yarn feeding device detects the run or stop signal.

59. (New) The yarn processing system of Claim 56, wherein said supply spool includes a braking element fixed thereto, and said braking device includes a pneumatic cylinder and a friction element which acts upon said braking element, said friction element being positionally adjustable between engagement and disengagement positions relative to said braking element by said pneumatic cylinder.

60. (Withdrawn) The yarn processing system of Claim 52, wherein said regulating device includes a slip rotational drive which is adjustable between a conveying operation mode so as to generate lower driving torque than the torque generated at said supply spool by the yarn tension during withdrawal of the yarn by said winding drive, and a braking operation mode so as to generate a braking torque sufficient to stop said supply spool.
